

May 11, 2017

INDIANA UTILITY

REGULATORY COMMISSION

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF SOUTHERN INDIANA GAS AND)
 ELECTRIC COMPANY d/b/a VECTREN)
 ENERGY DELIVERY OF INDIANA, INC. FOR)
 APPROVAL OF CLEAN ENERGY SOLAR)
 PROJECTS; DECLINATION OF JURISDICTION)
 WITH RESPECT TO CONSTRUCTION OF THE)
 PROJECTS PURSUANT TO IND. CODE § 8-1-2.5;)
 AND ACCOUNTING AND RATEMAKING)
 TREATMENT, INCLUDING TIMELY)
 RECOVERY OF COSTS INCURRED DURING)
 CONSTRUCTION AND OPERATION THROUGH)
 A CLEAN ENERGY COST ADJUSTMENT)
 PURSUANT TO IND. CODE § 8-1-8.8)

CAUSE NO. 44909

SUBMISSION OF CORRECTED PAGE 17 AND 18 OF PETITIONER'S
EXHIBIT NO. 2 TO THE DIRECT TESTIMONY OF WAYNE D. GAMES

Petitioner Southern Indiana Gas and Electric Company d/b/a Vectren Energy Delivery of Indiana, Inc. ("Petitioner" or "Vectren South") by counsel, respectfully submits to the Indiana Utility Regulatory Commission corrected pages 17 and 18 to Petitioner's Exhibit No. 2, the Direct Testimony of Wayne D. Games in the above referenced Cause. Page 17, line 25 states the operation and maintenance ("O&M") costs for the US 41 and Evansville urban projects are estimated to be \$80,000 annually. This number does not include O&M for the 1MW battery energy storage system ("BESS") at the US 41 site. The correction includes O&M for the 1 MW BESS making O&M costs for the US 41 and Evansville urban projects \$122,582 annually. Page 18, line 3 states that O&M costs for the ULRC is estimated at \$6,000 annually. This number does not include O&M for the 400 kWh BESS at the ULRC. The correction includes O&M for the 400 kWh BESS making O&M costs at the ULRC \$10,401 annually. Exhibit A is a redline copy of corrected pages 17 and 18, and Exhibit B is a clean copy of corrected pages 17 and 18.

Vectren South will substitute a clean version of the corrected exhibit in the Reporter's copy of its exhibits to be offered at the evidentiary hearing in this Cause in lieu of the filed version of pages 17 and 18.

Respectfully submitted,

Goldie T. Bockstruck

Robert E. Heidorn, Atty. No. 14264-49

P. Jason Stephenson, Atty. No. 21839-49

Goldie T. Bockstruck, Atty. No. 33914-82

Vectren Corporation

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing copy was served via electronic mail transmission or by depositing a copy thereof in the United States mail, first class postage prepaid, addressed to:

Randy Helmen
Karol Krohn
Indiana Office of Utility Consumer Counselor
PNC Center
115 West Washington Street, Suite 1500 South Indianapolis, Indiana, 46204
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This 11th day of May 2017.

/s/ Goldie T. Bockstruck
Goldie T. Bockstruck

1 projects. Witness Sears has included a copy of Vectren South's 2016 IRP as Petitioner's
 2 Exhibit No. 1, Attachment RCS-3. Figure 5.18 of the IRP demonstrates that the price
 3 per installed kW drops as a solar project increases in size. This is due to lower
 4 commodity pricing per installed kWac when purchasing and shipping higher volumes of
 5 material such as solar panels or racks. Further savings result from increased productivity
 6 and lower overall per kW project costs as project expenditures are spread across more
 7 installed kW for items such as one time mobilization and set up of construction
 8 equipment, time and labor involved in site preparation, layout of the project, cabling and
 9 wiring, fencing, access roads, combiner box and inverter installation and distribution
 10 interconnection. I have reproduced Figure 5.18 from our 2016 IRP below:
 11

Operating Size and Estimated Costs	3MW Solar PV	6MW Solar PV	9MW Solar PV	50MW Solar PV	100MW Solar PV
Base Load Net Output in AC	3	6	9	50	100
Estimated Project Costs (2015\$/kW)	\$ 3,420	\$ 2,700	\$ 2,540	\$ 2,260	\$ 2,230

12
13
14 **Q. Please explain the contingencies Vectren South has included.**

15 A. Vectren South has included approximately \$300,000 of contingency in each project for a
 16 total of \$600,000. This represents approximately 4.3% of both projects. This includes
 17 dollars to cover any unexpected expenses discovered during the permitting, construction
 18 or interconnect phase of either project.

19
20 **Q. Are the costs of interconnection included in the cost estimate?**

21 A. Yes.

22
23 **Q. What operation and maintenance ("O&M") costs does Vectren South anticipate**
 24 **incurring once the facilities are operating?**

25 | A. O&M cost are estimated to be approximately ~~\$80,000~~ 122,582 annually for both the US
 26 41 and Evansville urban projects and will include: maintaining the grass; ensuring all
 27 panels are accessible to be worked on if needed; periodic inspections of connections to

1 panels and combiner boxes; inverter inspections and maintenance; repairs to fencing;
2 and replacement of panels as needed. O&M costs will likely increase over time as
3 equipment ages. The O&M estimate for the ULRC is \$~~6,000~~10,401 annually.
4

5 **Q. Are there any other annual O&M costs for either the US 41 site or the Evansville**
6 **Urban site?**

7 A. Yes. The Evansville Urban site will also require a lease payment for the property. This is
8 currently being negotiated with the City.
9

10
11 **VII. PROJECT COMPONENTS AND DESIGN**
12

13 **Q. Will Vectren South need to seek the Midcontinent Independent System Operator,**
14 **Inc.'s ("MISO") approval to interconnect the US-41 or Evansville Urban Facilities?**

15 A. No. MISO approval is only required for generation sources connected to the
16 transmission system. These projects will be connected to the distribution system and
17 considered a "behind the meter" generating source. Even though they won't be
18 dispatched by MISO, they will play a role in reducing Vectren South's peak load and
19 reduce the amount of energy needed from the market or other Vectren South generation
20 sources.
21

22 **Q. How will Vectren South interconnect the US-41 and Evansville Urban Facilities**
23 **with its distribution network?**

24 A. Vectren South crews will interconnect the energy to the distribution system to ensure this
25 work is done safely and properly. The EPC contractors do not have a great deal of
26 experience in this area and this is the type of work Vectren South line crews perform on
27 a daily basis. Vectren South crews will install the underground cables, pad-mount
28 transformers, metering, relaying, and switches required to connect the solar sites to the
29 12.47kV system. These crews will also install the fiber optic communications cable

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